

	A	B	C	D	E	F	G	H	I	J	K	L	
1	Background Statistics for Data Sets with Non-Detects												
2	User Selected Options												
3	Date/Time of Computation	7/30/2013 10:12:06 AM											
4	From File	WorkSheet.xls											
5	Full Precision	OFF											
6	Confidence Coefficient	95%											
7	Coverage	95%											
8	Present or Future K Observations	1											
9	Number of Bootstrap Operations	2000											
10													
11	Chlordane												
12													
13	General Statistics												
14	Total Number of Observations	67	Number of Missing Observations								0		
15	Number of Distinct Observations	60											
16	Number of Detects	33	Number of Non-Detects								34		
17	Number of Distinct Detects	33	Number of Distinct Non-Detects								27		
18	Minimum Detect	0.117	Minimum Non-Detect								0.0438		
19	Maximum Detect	1.18	Maximum Non-Detect								0.91		
20	Variance Detected	0.0443	Percent Non-Detects								50.75%		
21	Mean Detected	0.468	SD Detected								0.21		
22	Mean of Detected Logged Data	-0.859	SD of Detected Logged Data								0.471		
23													
24	Critical Values for Background Threshold Values (BTVs)												
25	Tolerance Factor K (For UTL)	1.994	d2max (for USL)								3.068		
26													
27	Normal GOF Test on Detects Only												
28	Shapiro Wilk Test Statistic	0.912	Shapiro Wilk GOF Test										
29	5% Shapiro Wilk Critical Value	0.931	Data Not Normal at 5% Significance Level										
30	Lilliefors Test Statistic	0.174	Lilliefors GOF Test										
31	5% Lilliefors Critical Value	0.154	Data Not Normal at 5% Significance Level										
32	Data Not Normal at 5% Significance Level												
33													
34	Kaplan Meier (KM) Background Statistics Assuming Normal Distribution												
35	Mean	0.309	SD								0.242		
36	95% UTL95% Coverage	0.79	95% KM UPL (t)								0.715		
37	90% KM Percentile (z)	0.618	95% KM Percentile (z)								0.706		
38	99% KM Percentile (z)	0.871	95% KM USL								1.05		
39													
40	DL/2 Substitution Background Statistics Assuming Normal Distribution												
41	Mean	0.319	SD								0.222		
42	95% UTL95% Coverage	0.763	95% UPL (t)								0.693		
43	90% Percentile (z)	0.604	95% Percentile (z)								0.685		
44	99% Percentile (z)	0.837	95% USL								1.001		
45	DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons												
46													
47	Gamma GOF Tests on Detected Observations Only												
48	A-D Test Statistic	0.629	Anderson-Darling GOF Test										
49	5% A-D Critical Value	0.748	Detected data appear Gamma Distributed at 5% Significance Level										
50	K-S Test Statistic	0.144	Kolmogrov-Smirnoff GOF										
51	5% K-S Critical Value	0.154	Detected data appear Gamma Distributed at 5% Significance Level										
52	Detected data appear Gamma Distributed at 5% Significance Level												
53													
54	Gamma Statistics on Detected Data Only												
55	k hat (MLE)	5.199	k star (bias corrected MLE)								4.747		
56	Theta hat (MLE)	0.0899	Theta star (bias corrected MLE)								0.0985		
57	nu hat (MLE)	343.2	nu star (bias corrected)								313.3		
58	MLE Mean (bias corrected)	0.468											
59	MLE Sd (bias corrected)	0.215	95% Percentile of Chisquare (2k)								17.61		
60													
61	Gamma ROS Statistics using Imputed Non-Detects												
62	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												

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63	GROS may not be used when kstar of detected data is small such as < 0.1															
64	For such situations, GROS method tends to yield inflated values of UCLs and BTVs															
65	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates															
66	Minimum				0.077		Mean				0.324					
67	Maximum				1.18		Median				0.286					
68	SD				0.213		CV				0.659					
69	k hat (MLE)				2.539		k star (bias corrected MLE)				2.435					
70	Theta hat (MLE)				0.128		Theta star (bias corrected MLE)				0.133					
71	nu hat (MLE)				340.2		nu star (bias corrected)				326.3					
72	MLE Mean (bias corrected)				0.324		MLE Sd (bias corrected)				0.208					
73	95% Percentile of Chisquare (2k)				10.87		90% Percentile				0.602					
74	95% Percentile				0.723		99% Percentile				0.989					
75	The following statistics are computed using Gamma ROS Statistics on Imputed Data															
76	Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods															
77					WH		HW						WH		HW	
78	Approx. Gamma UTL with 95% Coverage				0.843		0.87		95% Approx. Gamma UPL				0.728		0.742	
79	95% Gamma USL				1.332		1.438									
80																
81	The following statistics are computed using gamma distribution and KM estimates															
82	Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods															
83	k hat (KM)				1.631		nu hat (KM)				218.5					
84					WH		HW						WH		HW	
85	Approx. Gamma UTL with 95% Coverage				1.055		1.144		95% Approx. Gamma UPL				0.871		0.922	
86	95% Gamma USL				1.879		2.216									
87																
88	Lognormal GOF Test on Detected Observations Only															
89	Shapiro Wilk Test Statistic				0.944		Shapiro Wilk GOF Test									
90	5% Shapiro Wilk Critical Value				0.931		Detected Data appear Lognormal at 5% Significance Level									
91	Lilliefors Test Statistic				0.167		Lilliefors GOF Test									
92	5% Lilliefors Critical Value				0.154		Data Not Lognormal at 5% Significance Level									
93	Detected Data appear Approximate Lognormal at 5% Significance Level															
94																
95	Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects															
96	Mean in Original Scale				0.339		Mean in Log Scale				-1.226					
97	SD in Original Scale				0.199		SD in Log Scale				0.526					
98	95% UTL95% Coverage				0.838		95% BCA UTL95% Coverage				0.814					
99	95% Bootstrap (%) UTL95% Coverage				0.825		95% UPL (t)				0.711					
100	90% Percentile (z)				0.576		95% Percentile (z)				0.698					
101	99% Percentile (z)				0.999		95% USL				1.475					
102																
103	Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution															
104	KM Mean of Logged Data				-1.63		95% KM UTL (Lognormal)95% Coverage				1.687					
105	KM SD of Logged Data				1.08		95% KM UPL (Lognormal)				1.203					
106	95% KM Percentile Lognormal (z)				1.157		95% KM USL (Lognormal)				5.377					
107																
108	Background DL/2 Statistics Assuming Lognormal Distribution															
109	Mean in Original Scale				0.319		Mean in Log Scale				-1.458					
110	SD in Original Scale				0.222		SD in Log Scale				0.918					
111	95% UTL95% Coverage				1.452		95% UPL (t)				1.089					
112	90% Percentile (z)				0.755		95% Percentile (z)				1.054					
113	99% Percentile (z)				1.97		95% USL				3.891					
114	DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.															
115																
116	Nonparametric Distribution Free Background Statistics															
117	Data appear to follow a Discernible Distribution at 5% Significance Level															
118																
119	Nonparametric Uppper Limits for BTVs(no distinction made between detects and nondetects)															
120	Order of Statistic, r				66		95% UTL with95% Coverage				0.91					
121	Approximate f				1.737		Confidence Coefficient (CC) achieved by UTL				0.854					
122	95% UPL				0.81		95% USL				1.18					
123	95% KM Chebyshev UPL				1.37											
124																

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125	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
126	data set free of outliers and consists of observations collected from clean unimpacted locations.											
127	The use of USL tends to provide a balance between false positives and false negatives provided the data											
128	represents a background data set and when many onsite observations need to be compared with the BTV.											
129												